



PATENT
COR00259P00031US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:) System and Method of Introducing Ozone Treated
J. Michael Corrigan et al.) Humidified Air Into A Refrigerated Service Display
Serial No.: 10/725,097) Case or Refrigerated Storage Room
Filed: December 1, 2003) Group Art Unit: 1761
Examiner: Alexander, Reginald

LETTER OF TRANSMITTAL

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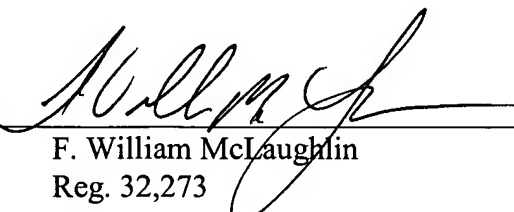
Sir:

The Appellant's Brief on Appeal is filed herewith together with our check in the amount of \$255.00 to cover the filing fee for small entity. Please charge any additional fee or credit any overpayment to Deposit Account No. 23-0785.

Respectfully submitted,

Date: February 12, 2008

By:

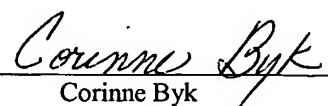

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37 CFR 1.8
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APPELLANTS' BRIEF ON APPEAL

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Sir:

This brief is in support of the Notice of Appeal in the above.

REAL PARTY IN INTEREST

The real party in interest is Corrigan Corporation of America, the assignee of the application.

02/19/2008 CCHAU1 00000013 10725097

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RELATED APPEALS AND INTERFERENCES

There are no related appeals and interferences.

STATUS OF THE CLAIMS

Claims 1-13 are pending in the application, are rejected, and are at issue in the appeal.

The claims are set forth in the Claims Appendix.

STATUS OF AMENDMENTS

No amendment was filed subsequent to final rejection.

SUMMARY OF CLAIMED SUBJECT MATTER

Claim 1 defines an improvement in a humidification system 10, see Fig. 1, including an atomizing nozzle 18, a water supply 28, and a control 27 selectively supplying pressurized water from the supply 28 to the atomizing nozzle 18 so that an atomized vapor pattern is provided (see page 5, lines 6-7 and page 5, line 12 to page 6, line 2). The improvement comprises an ozone generator 46 and an air compressor 58 operatively connected between the ozone generator 46 and the atomizing nozzle 18 for delivering pressurized ozone to the atomizing nozzle 18 so that the nozzle delivers ozonated vapor (see page 7, lines 3-9).

Independent claim 5 defines a humidification system 10, see Fig. 1, for a product holding space 14 comprising an air atomizing nozzle 18 positioned proximate the product holding space 14 and including a water inlet 22 and an air inlet 24 (see page 5, lines 6-9). A

water supply 28 and a control 27 selectively supply pressurized water from the supply to the atomizing nozzle water inlet 22 (see page 5, lines 12-20). An air compressor 58 is operatively connected between an ozone generator 46 and the atomizing nozzle air inlet 24 for delivering pressurized ozone to the atomizing nozzle 18 so that the nozzle delivers ozonated vapor into the product holding space 14 (see page 6, lines 3-8 and page 7, lines 3-9).

Independent claim 11 defines, a humidification system 100, see Fig. 5, for a refrigerated display case 114 comprising a plurality of air atomizing nozzles 112 positioned proximate the display case 114 (see page 8, line 12 to page 9, line 3). Each nozzle 112, which is similar to the nozzle 18, includes a water inlet 22 and an air inlet 24 (see page 5, lines 6-9). A water supply 102 and a control 106 selectively supply pressurized water from the supply 102 to the atomizing nozzle water inlets. An air compressor 58, see Fig. 1, is operatively connected between an ozone generator 104 and the atomizing nozzles air inlets for delivering pressurized ozone to the atomizing nozzles 112 so that the nozzles deliver ozonated vapor into the display case 114 (see page 8, line 12 to page 9, line 3).

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 1, 5, 9 and 10-13 are obvious over Kleinberger et al. U.S. Patent No. 5,350,117 (hereinafter "Kleinberger") in view of Denvir et al. U.S. Patent No. 6,120,822 (hereinafter "Denvir")?
2. Whether claims 2-4 and 6-8 are obvious over Kleinberger in view of Denvir and further in view of Karlson U.S. Patent No. 4,517,159 (hereinafter "Karlson")?

3. Whether claims 1, 5, 9, 11 and 12 are obvious over Dettling U.S. Patent No. 6,406,006 (hereinafter "Dettling") in view of Denvir?

4. Whether claims 2-4 and 6-8 are obvious over Dettling in view of Denvir and further in view of Karlson?

5. Whether claims 10 and 13 are obvious over Dettling in view of Denvir and further in view of Kleinberger?

ARGUMENT

GROUND 1

Claims 1, 5, 10, 11 and 13.

Independent claim 1 specifies an improvement in a humidification system including an atomizing nozzle, a water supply and a control selectively supplying pressurized water from the supply to the atomizing nozzle so that atomized vapor is provided. The improvement comprises an ozone generator and an air compressor operatively connected between the ozone generator and the atomizing nozzle for delivering pressurized ozone to the atomizing nozzle so that the nozzle develops ozonated vapor.

Neither of the references, alone or in any proper combination, discloses or suggests using an atomizing nozzle delivering ozonated vapor in a humidification system.

Kleinberger discloses a humidification system using a misting nozzle 40. Contrary to the statements in the action, the nozzle is not an air atomizing nozzle. The

specification simply refers to the nozzle as a mist assembly which is connected to a water supply tube and a drain tube. There is no pressurized air used so that the assembly could not be an atomizing nozzle.

Denvir discloses an apparatus for treating food with ozone. There is no basis for combining the systems of Kleinberger and Denvir. At most, the systems could be used side by side so that one provides water mist and the other ozone. However, there is no disclosure or suggestion of combining the two to produce ozonated vapor using an atomizing nozzle.

The rejection fails in its incorrect reading of Kleinberger as disclosing an air atomizing nozzle and then suggesting that the ozone generator of Denvir could be somehow connected to the air atomizing nozzle. Since Kleinberger does not disclose or suggest an air atomizing nozzle, let alone the use of pressurized air in any fashion in connection with the misting, the combination is not supportable.

The action identifies an air inlet 124a in Kleinberger. However, this air inlet is simply an opening in the side of the misting nozzle. It receives ambient air which is not pressurized. Indeed, Kleinberger at col. 13, lines 13-34, teaches away from the proposed combination as follows:

In the preferred embodiment of the present invention, no significant air flow from other sources is directed toward the mist assembly 40. Thus, air from other sources is not, according to the preferred embodiment, directed into the air inlets 124 to create one type of "pushing" mist 41, 43 and air through the mist chamber 54, nor is air directed across the release aperture 57 to decrease pressure at the release aperture 57 to "pull" mist 41, 43 and air through the mist chamber 54.

Otherwise, air can be directed toward the air inlets, however this is not pressurized air and, in any event, does not render the misting nozzle an air atomizing nozzle. No combination of the references results in an atomizing nozzle delivering vapor, let alone ozonated vapor.

In discussing Kleinberger, the rejection states that nothing in the claims require pressurized air for an air atomizing nozzle. This ignores the express limitation in the claim to an air compressor for delivering pressurized ozone to the atomizing nozzle. Simply providing pressurized water to a nozzle may result in mist. However, Kleinberger, using only pressurized water, and not pressurized air, does not provide an atomizing nozzle. The Examiner otherwise equates a pump, as in Denvir, with an air compressor. This is also improper. A pump moves air, it does not compress air. Thus, the action clearly relies on incorrect interpretations of what is taught in the references while ignoring express limitations in the claims.

The action also notes that the test for combining references “is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art”. Applicants submit that what Kleinberger and Denvir teach to one skilled in the art are separate and independent. Denvir discloses use of ozone for treatment of contaminated food. Kleinberger discloses the use of mist for hydration of food. This could be used side-by-side. Combining them would not result in the claimed invention. Neither reference combines pressurized air with pressurized water in an atomizing nozzle. Kleinberger used pressurized water with ambient air, while Denvir uses ozone gas delivered via a blower or the like. The references taken as a whole

would not suggest the claimed invention of delivering pressurized ozone to an atomizing nozzle so that the nozzle delivers ozonated vapor.

Claim 1 is not obvious over Kleinberger in view of Denvir.

Independent claim 5 specifies a humidification system for a product holding space, comprising an air atomizing nozzle positioned proximate the product holding space and including a water inlet and an air inlet. A water supply and a control selectively supply pressurized water from the supply to the atomizing nozzle water inlet. An air compressor is operatively connected between an ozone generator and the atomizing nozzle air inlet for delivering pressurized ozone to the atomizing nozzle so that the nozzle delivers ozonated vapor into the product holding space.

Claim 5 is not obvious for the same reasons discussed above relative to claim 1. More particularly, the nozzle of Kleinberger does not disclose an air inlet receiving pressurized air. The action references element 124a which is an air inlet to a body panel. This is not an air inlet to an atomizing nozzle. Claim 5 is not obvious. Claim 10 depends from claim 5 and is likewise not obvious.

Independent claim 11 specifies a humidification system for a refrigerated display case comprising a plurality of air atomizing nozzles positioned proximate the display case and each including a water inlet and an air inlet. A water supply and a control selectively supply pressurized water from the supply to the atomizing nozzle water inlets. An air compressor is operatively connected between an ozone generator and atomizing nozzle air inlets for delivering

pressurized ozone to the atomizing nozzle so that the nozzles deliver ozonated vapor into the display case.

Independent claim 11 is believed allowable for the same reasons discussed above relative to claims 1 and 5. Dependent claim 13 is likewise believed allowable and withdrawal of the rejection is requested.

Claims 9 and 12

Claim 9 depends from claim 5 and specifies the air atomizing nozzle delivers ozonated air into the product holding space when the pressurized water is not being supplied.

Claim 12 is similar and depends on independent claim 11.

As discussed above, Kleinberger discloses use of mist, while Denvir discloses use of ozone. The two are independent and unrelated such that the combination is improper and at most results in the two independent systems being used side by side.

To the extent Kleinberger uses air, it does so using ambient air. It does not receive pressurized air, and thus pressurized ozone. If the control in Kleinberger were turned off, the nozzle would be inoperable. The nozzle would not deliver any mist. The nozzle itself would certainly not deliver ozonated air into the product holding space. Thus, claim 9 and similarly claim 12, are not obvious for this reason as well.

GROUND 2

Claims 2-4 and 6-8

Claims 2-4 depend from claim 1. Claims 6-8 depend from claim 5. The deficiencies with respect to Kleinberger and Denvir are noted above. Karlson does not disclose or suggest these deficiencies. Instead, Karlson is cited for use of an air inlet filter, air dryer and muffler. Even if the combination were proper, the combination would not result in the claimed invention. Therefore, the rejection is improper and ought be withdrawn.

GROUND 3

Claims 1, 5 and 11

Independent claim 1 is set forth above.

No combination of Dettling and Denvir produces a system using an atomizing nozzle receiving pressurized ozone and pressurized water to develop ozonated vapor.

Dettling discloses a basic humidification system for a display case or the like. This system uses atomizing nozzles. The system in Dettling is generally consistent with that discussed under the heading "Background of the Invention" of the instant application. Such a system is used for providing hydration.

Denvir discloses a pump and ozone generator used to sterilize food products in a holding case with ozone. The ozone is apparently introduced using blowers or fans. Denvir does not mention the use of an air compressor as the method of supplying the ozone into the air stream. The action is incorrect in characterizing the pump as an air compressor. The pump in

Denvir is used to move the gas, not to pressurize the gas. Considering the overall structure used in Denvir, such as the delivery system 50, the use of a compressor would serve no purpose.

Because Denvir does not disclose or suggest compressing ozone, it would not be a substitute for the air supply of Dettling.

In fact, it is not obvious to compress ozone as it has been thought that ozone would attack the internal parts of a compressor and quickly damage the parts due to the corrosiveness of ozone.

Moreover, Denvir teaches against the combination and is essentially contrary to the proposed combination. The Board's attention is directed to Denvir at col. 3, lines 48-58 which indicate that ozone decomposition is accelerated by water and at higher pressures. The purpose of a compressor is to substantially increase pressure of the material, ozone in the case of the claims. Thus, Denvir teaches against using a compressor with ozone as it would accelerate ozone decomposition.

Denvir further teaches against the combination at col. 5, lines 18-24 as follows:

Furthermore, it would be desirable if the system prevented overheating and pressure buildup, made optimum use of ozone, and reduced or eliminated ozone waste and transfer to the environment.

The claim system relies on pressure build-up as it uses a compressor to compress the ozone. Thus, the claims are contrary to the express teachings of Denvir.

Thus, no proper combination of the references results in the claimed invention so that claim 1, and similarly independent claims 5 and 11 are not obvious.

Claims 9 and 12

Claim 9 depends from claim 5 and specifies the air atomizing nozzle delivers ozonated air into the product holding space when the pressurized water is not being supplied.

Claim 12 is similar and depends on independent claim 11.

As discussed above, Dettling and Denvir are unrelated such that the combination is improper.

In Dettling, when the system is turned off the compressor does not operate. The nozzle itself would certainly not deliver ozonated air into the product holding space. Thus, claim 9 and similarly claim 12, are not obvious for this reason as well.

GROUND 4

Claims 2-4 and 6-8

Claims 2-4 and 6-8 depend from claims 1 and 5, respectively, discussed above. Karlson does not disclose or suggest the deficiencies noted with respect to Dettling and Denvir. Therefore, the rejection is improper and ought be withdrawn.

GROUND 5

Claims 12 and 13

Claim 10 depends from claim 5 and specifies that the water supplying control comprises a time for intermittently supplying pressurized water from the supply to the atomizing nozzle water inlet. Claim 13 is generally similar, albeit depending on claim 11.

The deficiencies with respect to Dettling and Denvir are noted above. Kleinberger does not disclose or suggest these deficiencies, as also noted above.

The rejection is improper and ought be withdrawn.

CLAIMS APPENDIX

1. In a humidification system including an atomizing nozzle, a water supply
2 and a control selectively supplying pressurized water from the supply to said atomizing nozzle so
that atomized vapor is provided, the improvement comprising:

4 an ozone generator; and

an air compressor operatively connected between the ozone generator and the
6 atomizing nozzle for delivering pressurized ozone to the atomizing nozzle so that the nozzle
delivers ozonated vapor.

2. The improvement of claim 1 further comprising an air inlet filter
2 connected between the ozone generator and the air compressor.

3. The improvement of claim 1 further comprising an air drier connected to
2 an inlet of the ozone generator.

4. The improvement of claim 1 further comprising a muffler connected
2 between the ozone generator and the air compressor.

5. A humidification system for a product holding space comprising:
2 an air atomizing nozzle positioned proximate the product holding space and
including a water inlet and an air inlet;

4 a water supply and a control selectively supplying pressurized water from the
supply to said atomizing nozzle water inlet;

6 an ozone generator; and
an air compressor operatively connected between the ozone generator and the
8 atomizing nozzle air inlet for delivering pressurized ozone to the atomizing nozzle so that the
nozzle delivers ozonated vapor into the product holding space.

6. The humidification system of claim 5 further comprising an air inlet filter
2 connected between the ozone generator and the air compressor.

7. The humidification system of claim 5 further comprising an air drier
2 connected to an inlet of the ozone generator.

8. The humidification system of claim 5 further comprising a muffler
2 connected between the ozone generator and the air compressor.

9. The humidification system of claim 5 wherein the air atomizing nozzle
2 delivers ozonated air into the product holding space when the pressurized water is not being
supplied.

10. The humidification system of claim 5 wherein the water supply and
- 2 control comprises a timer for intermittently supplying pressurized water from the supply to said atomizing nozzle water inlet.

11. A humidification system for a refrigerated display case comprising:

2 a plurality of air atomizing nozzles positioned proximate the display case and each
including a water inlet and an air inlet;

4 a water supply and a control selectively supplying pressurized water from the
supply to said atomizing nozzle water inlets;

6 an ozone generator; and

an air compressor operatively connected between the ozone generator and the
8 atomizing nozzle air inlets for delivering pressurized ozone to the atomizing nozzles so that the
nozzles deliver ozonated vapor into the display case.

12. The humidification system of claim 11 wherein the air atomizing nozzles

2 deliver ozonated air into the product holding space when the pressurized water is not being
supplied.

13. The humidification system of claim 11 wherein the water supply and

2 control comprises a timer for intermittently supplying pressurized water from the supply to said
atomizing nozzle water inlet.

EVIDENCE APPENDIX

There is no evidence relied on.

RELATED PROCEEDINGS APPENDIX

There are no related proceedings.

SUMMARY

The three principal references are Kleinberger, Denvir and Dettling. Kleinberger discloses a humidification system using a misting nozzle relying on pressurized water alone. It does not rely on use of pressurized air. There is no atomizing nozzle. Dettling uses an air atomizing nozzle, however, it does not disclose or suggest the use of ozone rather than air to the air inlet. Denvir discloses use of ozone gas for food decontamination. However, Denvir teaches against being combined with the other references noting that ozone decomposition is accelerated by water and pressure. The purpose of a compressor is to provide pressure build-up and in the context of the claimed invention is thereafter mixed with pressurized water in an air atomizing nozzle. Denvir teaches against such a system so that the combination is improper.

Reconsideration of the application and reversal of the rejections is requested.

Respectfully submitted,

Dated: February 12, 2008

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